



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,806	11/21/2003	Leonid Razoumov	010052D1	3290
23696 7590 12/13/2007 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			EXAMINER MALEK, LEILA	
			ART UNIT 2611	PAPER NUMBER
			NOTIFICATION DATE 12/13/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com  
kascanla@qualcomm.com  
nanm@qualcomm.com

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">10/719,806</p>	<p>Applicant(s)</p> <p align="center">RAZOUMOV ET AL.</p>	
	<p>Examiner</p> <p align="center">Leila Malek</p>	<p>Art Unit</p> <p align="center">2611</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/13/2007 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 6, 8-10, 14, and 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al. (hereafter, referred as Choi) (US 6,757,537), in view of Saints et al. (hereafter, referred as Saints) (US 5,872,775).

As to claims 1, 8, and 9, Choi discloses a power control device and method in a mobile communication system (see the abstract and column 1, second paragraph). Choi discloses determining an energy value (i.e. power control parameter has been interpreted as energy value) (see the abstract, column 2, lines 41-52) for a transmission from a first station (interpreted as a base station) to a second station

(interpreted as a remote terminal); forming a message carrying the energy value (see Fig. 12, block 1214); and transmitting the message to the second station. Choi discloses all the subject matters claimed in claims 1, 8, and 9, except that there is a decoder residing in the second station. Choi also does not disclose that the energy value transmitted to the second station is based on a traffic energy to a pilot energy ratio and aids the decoder to decode the transmission. Saints discloses (see column 7, lines 39-52) a communication system, wherein upon establishment of a link between a mobile unit N and a cell-site N' (i.e. the transmitter), cell site N' transmits an initial ratio of full-rate frame power to pilot power (i.e. the traffic (see column 7, line 50) energy to a pilot energy ratio) to the mobile unit, and this initial ratio is stored in memory 44 as the reference ratio. Saints further discloses that for each frame of received data signal, also called traffic signal, rate processor 46 computes a frame ratio of the power of the data signal to the power of the pilot signal. Moreover, Saints discloses that rate determined by the rate determination unit is then used to properly decode the frame of data (see the abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a decoder at the remote station (the receiver) to extract the original transmitted data from the coded information received from the base station and also it would have been obvious to one of ordinary skill in the art at the time of invention to modify Choi to send traffic energy to pilot energy ratio information to the receiver, as suggested by Saints, to increase the performance of the receiver.

As to claim 10, Choi discloses a power control device and method in a mobile communication system (see the abstract and column 1, second paragraph). Choi discloses a transmission power control unit for determining an energy value (see the abstract, column 2, lines 41-52) for a transmission from a first station (interpreted as a base station) to a second station (interpreted as a remote terminal); a channel element coupled to the transmission power control unit for forming a message carrying the energy value (see Fig. 12, block 1214); and for transmitting the message to the second station. Choi discloses all the subject matters claimed in claim 10, except that there is a decoder residing in the second station. Choi also does not disclose that the energy value transmitted to the second station is based on a traffic energy to a pilot energy ratio and aids the decoder to decode the transmission. Saints discloses (see column 7, lines 39-52) a communication system, wherein upon establishment of a link between a mobile unit N and a cell-site N' (i.e. the transmitter), cell site N' transmits an initial ratio of full-rate frame power to pilot power (i.e. the traffic (see column 7, line 50) energy to a pilot energy ratio) to the mobile unit, and this initial ratio is stored in memory 44 as the reference ratio. Saints further discloses that for each frame of received data signal, also called traffic signal, rate processor 46 computes a frame ratio of the power of the data signal to the power of the pilot signal. Moreover, Saints discloses that rate determined by the rate determination unit is then used to properly decode the frame of data (see the abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a decoder at the remote station (the receiver) to extract

the original transmitted data from the coded information received from the base station and also it would have been obvious to one of ordinary skill in the art at the time of invention to modify Choi to send traffic energy to pilot energy ratio information to the receiver, as suggested by Saints, to increase the performance of the receiver.

As to claims 5 and 14, Choi discloses that the step of forming a message carrying the energy value comprises: locating the energy value in look-up table (or memory) (see column 2, lines 41-52); and including an index value corresponding to the energy value in the message (see column 16, lines 32-44).

As to claims 6 and 15, Choi discloses that the first station is a base station and the second station is a remote station (see the abstract and column 2, lines 42-52).

3. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi and Saints, further in view of Balachandran (US 6,608,828).

As to claims 2 and 11, Choi and Saints disclose all the subject matters claimed in claims 1 and 10, except for positioning the message in a preamble. Balachandran, in the same field of endeavor, Balachandran discloses a header (see Fig. 8) (interpreted as preamble) (interpreted as a message) that is repeatedly transmitted and received, along with data, on a radio channel, wherein the header is decoded to identify values for the header fields (see the abstract). Balachandran further discloses that the header comprises a power reduction field (see column 4, lines 25-30) to increase the reliability of the decoding process (see column 4, lines 25-33). It

would have been obvious to one of ordinary skill in the art at the time of invention to position the power control information in the preamble in order to inform the power control information to the second station right after the start of data reception and adjust signal power as soon as possible.

4. Claims 3, 4, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi and Saints, further in view of Guo et al. (hereafter, referred as Guo) (US 6,389,034).

As to claims 3 and 12, Choi and Saints disclose all the subject matters claimed in claims 1 and 10, except that the step of transmitting the message (power control information) comprises positioning the message in a sub-packet. Guo, in the same field of endeavor, discloses an apparatus comprising a base station and plurality of remote terminals. Guo discloses a frame structure, which includes sub-channel information (including power control information) being transmitted from the base station to the remote terminals or vice versa (see column 14, last paragraph). Guo further discloses that transmitting the power control information comprises positioning the information in a sub-packet (See column 14, lines 27-41). It would have been obvious to one of ordinary skill in the art at the time of invention to place the power control information (i.e. value of the signal energy) in the sub-packet to make the extraction of the information fast and easy (i.e. without detecting and processing the header) and as the result make very quick power control adjustments as suggested by Guo (see column 14, lines 29-33).

As to claim 4 and 13, Choi and Saints disclose all the subject matters claimed in claims 1 and 10, except that the step of transmitting the message (power control information) comprises positioning the message between a preamble and a sub-packet. Guo shows that the step of transmitting the message comprises positioning the message between a preamble and a sub-packet (see Fig. 4B). It would have been obvious to one of ordinary skill in the art at the time of invention to position the power control information (i.e. value of the signal energy) between the preamble and the sub-packet to make the extraction of the power control information fast and easy (i.e. without processing the preamble) and as the result make very quick power control adjustments as suggested by Guo (see column 14, lines 29-41).

5. Claims 7 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi and Saints, further in view of Moon et al. (hereafter, referred as Moon) (US 6,643,272).

As to claims 7 and 16, Choi and Saints disclose all the subject matters claimed in claims 1 and 10, except that the first station is a remote station and the second station is a base station. Moon, in the same field of endeavor, discloses a mobile communication system, which controls transmission power of radio links between a base station and a mobile (remote) station (see the abstract). Moon further discloses that the base station transmits a power control bit to the mobile station to make a power arbitration for transition and at the same time, mobile station transmits a power control bit to the base station, with an appropriate initial power (see column 10, lines 43-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time of



invention to send power control signals from a remote station to a base station to increase the power efficiency of the communication system.

As to claim 17, Choi discloses a power control device and method in a mobile communication system (see the abstract and column 1, second paragraph). Choi discloses a transmission power control unit for determining an energy value (see the abstract, column 2, lines 41-52) for a transmission from a first station (interpreted as a base station) to a second station (interpreted as a remote terminal); a channel element coupled to the transmission power control unit for forming a message carrying the energy value (see Fig. 12, block 1214); and for transmitting the message to the second station. Choi discloses all the subject matters claimed in claim 17, except that there is a decoder residing in the second station. Choi also does not disclose that the energy value transmitted to the second station is based on a traffic energy to a pilot energy ratio and aids the decoder to decode the transmission. Saints discloses (see column 7, lines 39-52) a communication system, wherein upon establishment of a link between a mobile unit N and a cell-site N' (i.e. the transmitter), cell site N' transmits an initial ratio of full-rate frame power to pilot power (i.e. the traffic (see column 7, line 50) energy to a pilot energy ratio) to the mobile unit, and this initial ratio is stored in memory 44 as the reference ratio. Saints further discloses that for each frame of received data signal, also called traffic signal, rate processor 46 computes a frame ratio of the power of the data signal to the power of the pilot signal. Moreover, Saints discloses that rate determined by the rate determination unit is then used to properly decode the frame of data (see the abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the

time of invention to use a decoder at the remote station (the receiver) to extract the original transmitted data from the coded information received from the base station and also it would have been obvious to one of ordinary skill in the art at the time of invention to modify Choi to send traffic energy to pilot energy ratio information to the receiver, as suggested by Saints, to increase the performance of the receiver. Neither Choi nor Saints expressly disclose that transmitter is adapted to transmit the message in a forward link channel to the remote station. Moon in the same field of endeavor, discloses a mobile communication system (see the abstract), wherein a transmitter is adapted to transmit power control messages in a forward link channel to the remote station (see column 4, last paragraph). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Choi and Saints as suggested by Moon to transmit power control messages via the forward link channel in order to avoid using extra channels just for sending power control messages and save the bandwidth.

As to claim 18, Choi discloses a power control device and method in a mobile communication system (see the abstract and column 1, second paragraph). Choi discloses a transmission power control unit for determining an energy value (see the abstract, column 2, lines 41-52) for a transmission from a first station to a second station; a channel element coupled to the transmission power control unit for forming a message carrying the energy value (See Fig. 12, block 1214); and for transmitting the message to the second station. Choi discloses all the subject matters claimed in claim 18, except that there is a decoder residing in the base station. Choi also does not disclose that the energy value transmitted to the second station is based on a traffic

energy to a pilot energy ratio and aids the decoder to decode the transmission. Saints discloses (see column 7, lines 39-52) a communication system, wherein upon establishment of a link between a mobile unit N and a cell-site N' (i.e. the transmitter), cell site N' transmits an initial ratio of full-rate frame power to pilot power (i.e. the traffic (see column 7, line 50) energy to a pilot energy ratio) to the mobile unit, and this initial ratio is stored in memory 44 as the reference ratio. Saints further discloses that for each frame of received data signal, also called traffic signal, rate processor 46 computes a frame ratio of the power of the data signal to the power of the pilot signal. Moreover, Saints discloses that rate determined by the rate determination unit is then used to properly decode the frame of data (see the abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use a decoder at the remote station (the receiver) to extract the original transmitted data from the coded information received from the base station and also it would have been obvious to one of ordinary skill in the art at the time of invention to modify Choi to send traffic energy to pilot energy ratio information to the receiver, as suggested by Saints, to increase the performance of the receiver. Choi and Saints disclose all the subject matters claimed in claim 18, except that the first station is a remote station and the second station is a base station. Also neither Choi, nor Saints, disclose that a transmitter is adapted to transmit the message in a reverse link channel to the base station. Moon, in the same field of endeavor, discloses a mobile communication system, which controls transmission power of radio links between a base station and a mobile (remote) station (see the abstract). Moon further discloses that the base station transmits a power

control bit to the mobile station to make a power arbitration for transition and at the same time, mobile station transmits a power control bit to the base station, with an appropriate initial power (see column 10, lines 43-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to send power control signals from a remote station to a base station to increase the power efficiency of the communication system. Moon also discloses a transmitter adapted to transmit the message in a reverse link channel to the base station (see column 5, first paragraph). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Choi and Saints as suggested by Moon to transmit the message in a reverse link channel to the base station in order to avoid using extra channels just for sending power control messages and save the bandwidth.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leila Malek whose telephone number is 571-272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:  
10/719,806  
Art Unit: 2611

Page 12

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leila Malek  
Examiner  
Art Unit 2611

L.M.

6.

  
CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER